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ABSTRACT

This study assessed the impact on student learning outcomes of the Integrated Center of Public Education (ICPE), an innovative program in Rio de Janeiro (Brazil) for at-risk students; and compared school educational programs of the ICPE and a regular public school serving the same low-income community and focusing on critical thinking competence through literacy skills. The curriculum and pedagogical practices of the ICPE school were progressive; those of the regular school were traditional. ICPE subject matter areas were integrated within the curriculum and teacher-student interactions were based on dialogs, discussions, and debates concerning themes presented by teachers. Subjects included 32 ICPE students and 33 regular school students. Literacy abilities were assessed through oral discussions of ideas and interpretations of texts and argumentative compositions. The assessment of student performance was done at the end of the literacy cycle in the fourth grade. Methods used included an ethnographic evaluation in both schools combining participant observation; interviews; documentary analysis; and the administration of three sets of criteria-referenced tests to assess students' critical thinking competence through writing, reading, and oral skills. The results of the testing process, school observation notes, and data from informal interviews with teachers were presented to the classes. Students from the ICPE performed significantly better than did students from the regular school in oral skills. Tests measuring writing and reading skills did not show any significant difference between the two schools. Included are 1 table and 10 references. (JB)

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AT RISK STUDENT EMPOWERMENT AND THE DEVELOPMENT OF CRITICAL THINKING SKILLS IN THE BRAZILIAN PUBLIC SCHOOLS

ED349365

by

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** This study was developed with the participation of ten Masters' students as research assistants.

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SUMMARY:

Based on a previous research study (Leonardos, 1990 and 1991) which suggested that an alternative public school program -- the CIEP, or Integrated Center of Public Education[1] -- implemented in Rio de Janeiro, Brasil, was offering the at-risk student population qualitatively different educational opportunities from the regular public school program, a study was undertaken to investigate the impact of this innovative program on students' learning outcomes. The purpose of the present paper is to provide an overview of the first study which compared school educational programs and to describe and discuss the evaluation results of students' performance in each school. Specifically, it consists of a comparative investigation to assess the development of students' critical thinking competence through literacy skills in a CIEP and in a regular public school.

[1] The CIEP schools were created in 1982 by the Democratic Labor Party in Rio de Janeiro. Although many CIEP schools were built since then, very few of them followed the CIEP educational program -- an essencially progressive one -- devised by Darcy Ribeiro.

SETTING THE BACKGROUND: COMPARING EDUCATIONAL PROGRAMS

In 1988 a comparative case study (Leonardos 1990) was devised to investigate the educational programs of two Municipal public schools of Rio de Janeiro -- one of which was following the original CIEP educational program and the other one implementing the regular program. The two selected schools were serving the same low-income student population. The main goal of this study was to find out to which extent the alternative program was different from the regular in two different dimensions: (1) curricular/pedagogical practices and (2) school-community relationship.

This study was approached from a social conflict perspective in so far as it grants schools and school communities power to introduce changes into society. Whithin this perspective, schools are not just passive agents of the state which reproduce the social relations of production. Instead, schools incorporate societal tensions, such as conflicting democratic and capitalist forces, and because of that, they have a built-in potential for producing change (Carnoy and Levin, 1986). The notion of change through education within this framework can only, in turn, be attained if coupled with the notion of student empowerment (Levin 1988, Cummins 1986, and Freire, 1970).

Besides observations conducted at the school level -- in-site teacher training, PTA meetings, class councils and school events -- two first grade classrooms from each school were selected for closer observation. Furthermore, teachers, supervisors and school principals were interviewed and complementary data were obtained from school reports and records.

The curriculum and pedagogical practices of the CIEP school were found to be progressive in nature. Subject-matter areas were integrated within the school curriculum and teacher-student interaction were based on

dialogues, discussions and debates over the themes presented by the teacher. By contrast, the regular school's curriculum and pedagogical practices were found to be traditional. Bodies of knowledge were conveyed to students in a fragmented manner and students were stimulated to memorize, rather than understand, concepts mainly through teacher-dominant lessons. The school-community relationship of the CIEP school was marked by a participatory model in which parents had a say in the school's activities as opposed to an exclusive model followed by the regular public one. Nevertheless, parents were still far from achieving the level of participation expected and desired by the CIEP school[2].

The changes identified in the innovative school program were considered by Leonardos (1990) to be closer aligned with the empowerment of economically disadvantaged students. This same study suggested that students immersed in the new program were being prepared to undertake tasks that involved higher level thinking skills such as the capacity to think critically whereas students graduating from the regular public school program were being prepared to undertake more routinized tasks involving predominantly lower level thinking skills.

LOOKING AT STUDENT PERFORMANCE IN BOTH PROGRAMS

Objectives

The main goal of the follow-up study was to assess the impact of each educational program on students' performance. In other words, the aim of this research was to investigate the extent to which differences in

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[2] For a complete discussion on the reasons why this happened see Leonardos, A. C. Opportunities to Learn Academic Skills in the Brazilian Public Schools, Doctoral Dissertation, CA: Stanford University, 1990.

educational programs resulted in differences in students' learning outcomes. The informal hypothesis was that higher order thinking skills should be more developed in students exposed to a progressive educational program that aimed at empowering students than in students exposed to a traditional program.

Critical Thinking Skills

Learning outcomes were delimited in this study as students' performance in activities involving critical thinking skills. Ribeiro (1986) clearly emphasizes the need to develop critical thinking skills when addressing the role of the literacy teacher in the CIEP program.

> (...) this is the importance of the literacy teacher, whose task is to multiply the experiences lived during the training which, in turn, aim at the development and taste for reading, critical thinking, and creative writing from the part of the students. (p. 66)

He also adds that an evaluation of a subject matter area should be done according to the objectives stated in the curriculum. "If the objective is to develop in students critical thinking skills, this is what should be observed in the evaluation process." (p. 65)

The criteria for assessing students' performance were the mastery, or not, of critical thinking skills. Once this concept was not defined by Ribeiro (1986,) "critical thinking" was understood in this study as the capacity to evaluate an idea, take a stand, and argue in favor or against the position taken in a coherent manner. Bloom, Krathwohl e Masia (1973) claim

that "evaluation" is the highest cognitive ability that can be attained. Furthermore, according to Kurfiss (1988), the capacity to evaluate can also be considered a manifestation of critical thinking. The author defines critical thinking as,

> (...) an investigation whose purpose is to explore a situation, phenomenon, question, or problem to arrive at a hypothesis or conclusion about it that integrates all available information and that can therefore be convincingly justified. (p. 2)

Since the main goal of the first cycle of the elementary grade (1st to 4th grade) in the Brazilian public school is to fully develop literacy skills, this study emphasized this same curriculum component. Critical thinking skills were in turn evaluated through three major literacy aspects that pervade all other academic activities (Ribeiro, 1986: 66) -- oral, writing and reading abilities. These three abilities were assessed through activities that envolved some type of evaluation, from the part of the students. Specifically, activities included oral discussions of ideas, interpretation of texts and argumentative compositions.

In order to avoid an assessment of students' performance based on curricular contents and allow students to express their critical thinking capacity more freely, themes for the oral, reading and writing evaluation were extracted from students' own lived experiences and interests. These themes were in turn detected during school and classroom observations. Finally, the testing process took two months and was smoothly integrated to the activities developed by the teachers.

Methodology

A comparative case study was designed to assess the development of students' higher order thinking skills in both types of school programs. For this purpose an innovative and a regular public school serving the same low-income student community in the outskirts of Rio de Janeiro were selected[3]. The assessment of students' performance was done at the end of the literacy cycle, i.e. in two forth grade classes. The reasons for this choice being that: (1) at this grade, the literacy process should be better sedimented, and (2) testing activities developed would tap more efficiently students' exposure to each educational program. In order to satisfy these selection criteria, it was verified that at least 50% of students in each class attended the same school since 1st grade.

It was observed from students' records and other school documents that despite the fact that students belonged to the same community, they differed slightly in their socio-economical background and family structure. The indicator of socio-economical background used in this study was type of housing, which basically consisted of three types. It was found that 53% of 4th grade students from the regular school lived in the best type of housing available in the low-income community, against only 26% of all 4th grade students from the alternative school. As far as family structure is concerned, it was observed that 21% of 4th grade students from the regular school did nor have father and/or mother, against 64% of CIEP 4th grade students. Nevertheless, it should be mentioned that school records of 4th

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3 Although the schools selected for the follow-up study were not the same as the ones studied in the first study, they had similar characteristics as the same school selection criteria was applied in both studies.

grade students from both schools showed that they did not differ much in terms of number of grades repeated.

These pieces of information confirmed what had already been observed in the two schools and shared with teachers. The regular school clientele was composed of the upper-segment of the local low-income population.

The complex nature of this investigation called for an ethnographic evaluation in both schools combining participant observation, interviews, documentary analysis, and the administration of three sets of criteria-referenced tests especially developed for this study to assess students' critical thinking competence through writing, reading and oral skills.

Students and teachers were observed in class for a whole semester and interviewed before tests began to be devised. As previously mentioned, tests were developed taking into account all the data collected in the school sites and was considered by school teachers to be sensitive to students' experience, language and background. Tests were administered with the approval and help of the school teachers in the form of classroom activities in order to avoid a formal testing atmosphere. The testing process took two months and consisted of nine sets of subjetive tests to assess critical thinking through three different oral, reading, and writing activities[4].

The results of this evaluation process were confronted with the notes taken during class and school observations as well as with the data obtained from the informal interviews conducted with students' teachers. This type of analysis allowed for a better contextualization of the tests results.

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[4] Due to space limitations the tests were not attached to this paper but can be obtained upon contact with the author.

Results

Test results (Table 1) suggest that students from the selected CIEP performed significantly better (59.4%) on the set of tests assessing mastery of critical thinking competence through oral skills than students from the regular school (24.2%)[5]. Results from the tests measuring writing and reading skills did not show any significant difference between the two schools. The CIEP students did worse in writing (65.6%) than regular school students (75.8%) but performed better in reading (59.4%) than the regular school students (45.5%).

Table (1)

Percentages of CIEP and Regular School Students that Attained Mastery of Critical Thinking by Type of Ability Tested

Ability	CIEP	Regular School
Oral	59.4%	24.2%
Reading	59.4%	45.5%
Writing	65.6%	75.8%
	(N=32)	(N=33)

Considering the global results in CIEP students' tests, it can be observed a considerable internal homogeneity among them -- 59.4%, 59.4% and 65.6%. This results suggest a balanced development of the critical thinking competence in all three tested abilities, eventhough they remain

[5] At the 0,01 level of significance.

below the expected and desired level. The same balance among results does not seem to occur when test results of regular school students are analysed. In fact, the results obtained by regular school students in the three tested abilities oscilate a great deal -- 24.2%, 45% and 75.8%. This suggests that the oral, reading and writing abilities through which critical thinking was assessed were unevenly developed by the school. In this case, writing skills seem to have been overemphasized whereas oral skills, practically totally neglected.

These findings were in turn consistent with data registered during classroom observations and reported by teachers during interviews. Unlike the regular school, the CIEP emphasized oral communication in most of its activities through constant teacher-student dialogues and debates. The following summary extracted from notes taken during classroom observation illustrate this tendency.

> None of the classroom observations notes register longer composition exercises about any subject. Only notes, messages, ads and telegrams were exercised priorizing an economic and objective use of language.
>
> The text (usually lyrics or poems) interpretations were done orally in form of a dialogue between teacher and students. At the end of the exercise, the teacher would give a multiple choice exercise with questions about the text to be done individually and then discussed orally by the whole class.
>
> The dialogue was the teacher-student interaction most frequent in class, and appeared in both oral and

written modalities. An example of this practice was the creation of texts to be placed in balloons which represented speeches of story characters like in cartoons.

It was also observed and registered that during the oral evaluation, CIEP students expressed themselves and talked about their personal experiences with greater ease than students from the regular school. When the CIEP teacher was interviewed she also admitted that oral skills were more emphasized in her class than writing ones, confirming the data obtained from tests and classroom observations.

The notes taken during classroom observation in the regular school indicate that students' orality was practically absent from academic activities. Lessons were structured upon textbooks from which the teacher extracted ready-made exercises that tested students' knowledge of the content-matter areas. This academic activity however was discrepant with results obtained by students in the argumentative compositions -- 75.8%. An informal interview with this teacher revealed that these students had had another teacher in the previous year who used to place great emphasis on writing skills, training students weekly on developing compositions. This piece of information seem to clarify students' easiness with the written modality but does not shed light one the fact that students did not seem to have any problems with the argumentative ability (in writing only) as well. This situation leads to further analysis.

If the discussion of results presented so far does not allow for final conclusions to be drawn, a complementary piece of information obtained from the oral interviews conducted with students from both schools may

help indicate new paths for analysis. The frequency of oral themes selected[6] by students of each school were recorded and revealed intriguing differences worthy of comment. Among eleven themes, students should chose three to talk about. On the one hand, the themes most frequently chosen by CIEP students were first "violence," followed by "friendship" and "school." On the other hand, themes most frequently chosen by regular school students were "school," "friendship" and "leisure." In other words, "violence" did not appear among the first three themes chosen by regular school students. In fact it did not even appear among the first six themes most frequently chosen by the latter group. This fact seems to point to a difference in the interests and taboos of students from each school. Since these students came from the same community, known to be an extremely violent one, it seems that there is a great deal of difference in the way each school addresses and chooses topics to be discussed in class.

Conclusions

The results previously presented and analysed suggest that students from the innovative school developed qualitatively different skills from students from the regular school, in so far as the former obtained a significantly superior result in the critical thinking activities devised through the oral activities. This difference can be partially explained by the considerable emphasis placed on orality by the alternative school. At the same time, CIEP students' performances on the sets of tests can be

[6] Only oral themes to be discussed by students could be chosen from a list of 11. This strategy aimed at ensuring that students would be able to talk about a topic of direct interest or relevance and that this would in turn make them feel at ease.

considered homogeneous and low. The homogeneity of CIEP students' test results become evident once the percentages in all specific abilities through which critical thinking was tested were fairly close to one another. Furthermore, they can be considered low -- the highest percentage did not exceed 65.5%-- in relation to what should be expected from a progressive educational program that places heavy emphasis on literacy skills and the development of critical thinking skills. This can be partially explained by the fact that this innovative progressive program can still be considered in its implementation process and may need more time to be sedimented[7].

Nevertheless, it should be taken into account that the present research only focuses on the cognitive aspects of the critical thinking competence. The potential for other types of analysis become clear when we observe the different pattern in frequencies selected by students from each school for oral discussion. This evidence suggest that there are differences between students exposed to a progressive program and to a traditional one which surpass the capacity to evaluate and argue, assessed in this study. It seems that the themes and subjects selected by each school to be discussed by students differ a great deal in their nature and could only be tapped through a content and discourse analysis of the material collected. This would in turn unveil another aspect of the critical thinking competence, which pertains more to the ideological realm than to the logical-argumentative one. In order to conduct such type of analysis, other definitions of critical thinking should be adopted such as the ones offered by Freire (1970) and Giroux (1978) presented below.

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[7] This CIEP school started implementing its progressive program in 1985.

> Reflection upon situationality is reflection about the very condition of existence: critical thinking by means of which men discover each other to be "in a situation." (Freire, 1970: 100)
>
> (...) The most powerful, yet limited, definition of critical thinking comes out of the positivist tradition in the applied sciences and suffers from what I call the Internal Consistency position. According to the adherents of the Internal Consisty position, critical thinking refers primarily to teaching students how to analyze and develop reading and writing assignments from the perspective of formal, locgial patterns of consistency. (...)
>
> As the core of what we call critical thinking, there are two major assumptions that are missing. First, there is a relationship between theory and facts; Secondly, knowledge cannot be separated from human interest, norms, and values.
>
> (Giroux, 1978: 297 - 298)

It is our next goal to conduct a content and discourse analysis of the data already collected in order to reach a more complete analysis of the critical thinking capacity of low-income students exposed to these two different educational programs. It appears that only by crossing the results from both cognitive and ideological assessments of critical thinking, such higher order skills will be tapped in its total complexity.

Contributions

In the absence of any systematic evaluation of program outcomes (Leonardos, 1991,) it is expected that this study will contribute to the better understanding of an educational philosophy that is now becoming widespread in the State and City of Rio de Janeiro and on the verge of being extended to all other states by the Federal Government[8]. More especifically, this study can help point to some of the weaknesses and strengths of this progressive educational program in order to help improve it. Finally, it is expected that this study will foster further discussion about the assessment and development of higher order thinking skills in school curricula that aim at student empowerment.

[8] The CIEP educational philosophy is in process of being implemented in the regular schools of Rio de Janeiro. Furthermore, the Brazilian Federal Government has just launched a project to build five thousand CIACs -- Integrated Centers for Child Assistance -- throughout the country in the next three years. This project consists is inspired in the CIEP school model.

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